**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:
Xing Su

Application No.: 10/748,374 | Confirmation No.: 8168

Filed: December 29, 2003 | Art Unit: 1634

For: METHODS FOR DETERMINING NUCLEOTIDE SEQUENCE INFORMATION | Examiner: K. D. Salmon

**DECLARATION OF DR. XING SU UNDER 37 C.F.R. 1.132**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Dr. Xing Su declares under penalty of perjury under the laws of the United States of America as follows:

(1) I have received a Ph.D. in **biology** in **1989** from **University of California at Santa Barbara**. My field of research has been biotechnology and nanotechnology. I have **over 20** peer-reviewed publications in academic journals, and I have served as a reviewer for multiple academic journals.

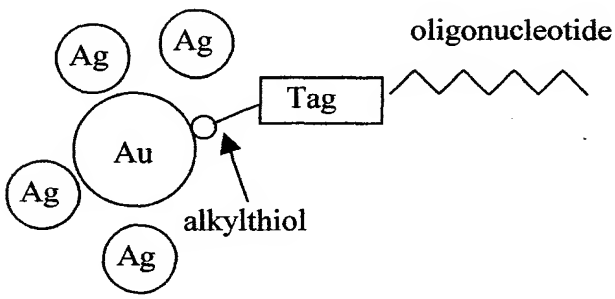
(2) I am familiar with the subject matter and claims of the present application.

(3) I reviewed the Examiner's rejection in the Action of October 16, 2007 and the cited references. The Examiner rejected claims 1-17, 22-34, and 36-44 because the Examiner concluded that "Cao et al. teaches a method in which the probe has a positively charged Raman signal enhancer (Figure 1 and p. 1537 1st column top of last paragraph). Cao et al. teaches the positively charged Raman signal enhancer is a Cy3-labeled alkylthiol capped oligonucleotide (Figure 1 and p.

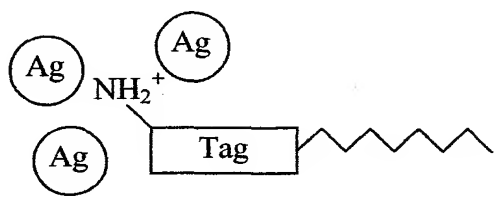
1537 1st column top of last paragraph). Faulds et al. teaches that Cy3 is positively charged (p. 668 2nd column 3rd paragraph) and therefore the probe comprises a positively charged enhancer."

(4) Faulds et al. do indeed teach that Cy3.5 and Cy5.5 dyes are positively charged when bound to oligonucleotides. (p. 668 2nd column 3rd paragraph). However, the Cy3.5 and Cy5.5 labeled oligonucleotides of Faulds were not attached to a metal surface. The Cy3.5 or Cy5.5 labels were attached to the oligonucleotides. The labeled oligonucleotides were then put in solution with silver colloid particles. (p. 668 1st column last paragraph). The silver colloid particles complex with the positively charged amine group of the Cy3.5 or Cy5.5 label.

(5) Cao et al., in contrast to Faulds, teach a Raman probe produced by attaching Cy3 labeled oligonucleotide strands to gold nanoparticles via an alkylthiol. (p. 1537, col. 1). The probes are then bound to capture strands which are bound to a chip. Id. Then the chip is treated with an enhancing solution containing silver particles. Id. According to Cao et al., the silver particles cluster around the nanoparticle probes. (p. 1537, col. 3). Cao et al. do not explain the theory behind the observed clustering. However, when the charged Cy3 labeled oligonucleotide of Cao et al. is attached to the gold particle, the Cy3 label loses its positive charge. Thus, Cao does not teach a Raman active oligonucleotide probe comprising positively charged signal enhancer as claimed in the present claims. The probe of Cao et al. and the presently claimed invention are illustrated below:




Cao et al.




Claimed Invention

(6) I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed at Satan Clara, California, United Stated of America, on this 18th day of January 2008.

Xing Su